

Abstract

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Method for automated measurement of the ohmic rotor resistance (R_r) of an asynchronous machine (1) controlled via an inverter (8) while being acted upon by a non-rotating field, the method involving

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- a. measuring the ohmic stator resistance (R_s), the leakage inductances (L_{os} , L_{or}) and the main inductance (L_m) of the asynchronous machine,
- b. leading a testing signal (U_{sa}) being formed by a predetermined direct signal with a superimposed alternating signal to a phase winding (a) of the asynchronous machine, the frequency of the alternating signal corresponding approximately to the nominal slip frequency (f_s) of the asynchronous machine (1),
- c. measuring the amplitude and the phase (ϕ) of the phase signal (I_{sa}) resulting from the testing signal, and
- d. calculating the ohmic rotor resistance (R_r) from the measured values according to a) and c).

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Measuring the ohmic rotor resistance in accordance with this method can be performed in a very short time, when the inductances and the ohmic stator resistance are known. Further, current displacement does not appear due to the low frequency of the alternating signal.

Fig. 1